Wildlife

The Jicarilla Wild Horse Territory is home to numerous wildlife species including Rocky Mountain elk, mule deer, mountain lion, bobcat, black bear, turkey, fox, ringtail cat, golden eagles, and Abert's squirrel. The Carracas, Bancos, and Cabresto canyons within the JWHT are of particular importance to wildlife because they have sumps in the drainage bottoms that act as perennial springs.

Threatened and Endangered Species

The bald eagle and Mexican spotted owl (MSO) are two federally listed species that occur on the JWHT.

Bald Eagle

Bald eagles are listed as threatened. They are winter residents on the district, but do not nest in the area. They roost in large trees and snags, usually on prominent ridgelines along major drainages. They are known to use Carracas and Bancos canyons for roosting, with nine documented winter roost sites within the JWHT. Their presence is attributed to the territory's close proximity to Navajo Reservoir. The eagles fly inland from the lake to roost primarily in larger ponderosa pines and snags along major drainages. They typically are seen on the district from early fall to late spring.

Mexican Spotted Owl

The Mexican spotted owl is listed as threatened, and additional critical habitat for the owl is proposed. Surveys for Mexican spotted owl have been conducted in all suitable nesting habitat on the Jicarilla Ranger District. [272a] Within the JWHT, there are approximately 1,200 acres of suitable/capable nest/roost habitat, all of which received complete 2-year surveys according to MSO survey protocols between 1990 and 1995. Typical nesting/roosting habitat used by the owls is scattered and isolated in mixed conifer stands found in the heads of canyons. Two territories have been established based on the presence of one pair and a single bird. One territory (based on a single owl) is located mostly within the boundaries of the JWHT. Both territories, however, have been unoccupied since 1993.

On November 18, 2003, the US Fish and Wildlife Service published a proposal to designate critical habitat for the Mexican spotted owl on National Forest System lands (68 FR 65020). [278] Three critical habitat units (SRM-NM-11, 12 and 13) are proposed on the Jicarilla Ranger District. The JWHT contains all of SRM-NM-13 and part of SRM-NM-12.

Wild horses and owls do not directly interact, however over-utilization of the range could lead to the decline of prey species necessary for the Mexican spotted owl's survival. [22, 23] The current range condition and trend for the Jicarilla Wild Horse Territory is fair/stable to poor/downward (see Vegetation section). Such conditions are likely to cause prey species for MSO to decline, thus affecting the suitability of the area for nesting spotted owls.

Forest Service Sensitive Species

The Southwestern Region of the Forest Service compiles and maintains a list of Forest Service sensitive species, which are also evaluated in site-specific environmental analyses. The northern goshawk and the Ripley milkvetch, a sensitive plant, are sensitive species that may inhabit the JWHT.

Northern Goshawk

Goshawks are forest-dwelling raptors that typically use stands of large ponderosa pine, with open understory. They are predatory birds that feed on rodents, small songbirds, lizards and other small prey. Since a goshawk is dependent upon the abundance of prey, the amount of existing forage for prey is important for the bird's survival. Approximately 11,000 acres of the wild horse JWHT have been surveyed for goshawk between 1991 and the present. One goshawk post-fledgling family area has been established on the Jicarilla Ranger District, and it is located within the JWHT.

Like the Mexican spotted owl, wild horses and goshawks do not directly interact, however over-utilization of the range could lead to the decline of prey species necessary for the goshawk's survival. It is likely, current range condition trends are causing a downward trend in prey species for the goshawk.

Ripley's Milkvetch

Ripley's milkvetch is a perennial, herbaceous plant found growing in sagebrush, piñon-juniper woodland and Gambel oak thickets in ponderosa pine forest at elevations of 7,000 to 8,250 feet. This is one of the few New Mexico milkvetches that is a desirable forage plant. Because of minimal or no toxic effects, deer, elk and all classes of livestock relish it. Because of its palatability, it is considered a gauge of overgrazing and grazing management practices.

The first New Mexico collection of Ripley's milkvetch was in 1947, and the first collected specimen on the Carson National Forest was on the Tres Piedras Ranger District in 1950. The plant is found in Conejos County, Colorado and Taos and Rio Arriba counties in New Mexico. Many of the areas where populations of Ripley's milkvetch are found are also managed as grazing lands. Between the time Ripley's milkvetch was first discovered on the Tres Piedras Ranger District in 1950 and 1988, few plants were recorded. This has changed dramatically. Plants are now observed growing by the thousands in high concentrations throughout the district, as individuals and/or growing in clusters within ponderosa pine or piñon-juniper woodlands with Arizona fescue understory and on volcanic substrate. On-going surveys have discovered previously unidentified population sites and Ripley's milkvetch plants are well distributed and in a healthy and vigorous condition. Although there is no known population of Ripley's milkvetch located on the Jicarilla Ranger District, there is still a possibility of it occurring there. In 1985, a plant survey was conducted on the district, however, Ripley's milkvetch was not found. The district is scheduled to survey for both the Ripley's and Chaca milkvetch in 2004.

Ripley's milkvetch seems to have a disturbance dependent ecology. This species has been documented to thrive in the aftermath of wildfire and prescribed burning. Recent fires on the Carson National Forest in the piñon-juniper (e.g., 1996 Hondo Fire) have increased available habitat disturbance conditions and increased this species' occupancy on National Forest system lands for the short-term. Populations also seem to thrive from land disturbing activities such as brush cutting and chaining of piñon-juniper woodlands. As landscapes recover from disturbance Ripley's milkvetch populations will likely decline.

Comparison of Alternatives

Alternative A

Alternative A would allow overgrazing in key areas to increase and range conditions would continue to decline. Grazing use would exceed the 30 percent use levels needed for MSO and goshawk prey species. Competition between wildlife and horses for available forage and cover would continue throughout the territory. It is questionable if prey base cover and forage would be

available in Mexican spotted owl or northern goshawk habitat. The bald eagle uses the area for winter territory. The bald eagle is primarily a fish and carrion feeder. Since, there is no fish on the district; the bald eagle is feeding mostly on carrion. If the overgrazing continues it is likely that there would be an increase in carrion during harsh winter conditions since the wild horses, elk and deer would be in poorer condition with less forage available for them during this time. No potential or suitable habitat (mixed-conifer/steep canyons) for the MSO would be negatively impacted by this alternative.

Alternative B

Alternative B would decrease grazing use to 30 percent available forage. Vegetation conditions would improve as the wild horse population is managed at a number in line with forage remaining after what is allocated for wildlife and livestock. Competition between wildlife, livestock and horses would be minimized and prey base cover and forage would be available in MSO and goshawk habitat over time as the area recovers from current poor conditions. The bald eagle would continue to winter in the area. And not be affected by this alternative. Although potential or suitable habitat for the MSO exists in the mixed-conifer and steep canyons that may be used by wild horses, this alternative would primarily affect the prey species instead of removing nesting or roosting habitat.

Alternative C

Like Alternative B, Alternative C would decrease grazing use to 30 percent of available forage. Vegetation conditions would improve as the wild horse population is balanced with permitted livestock grazing use. Competition between wildlife, livestock and horses would be minimized and prey base cover and forage would be available in MSO and goshawk habitat. No potential or suitable habitat (mixed-conifer/steep canyons) for the MSO would be negatively impacted by this alternative.

Alternative D

Alternative D would decrease grazing use to 30 percent of available forage during non-drought years. Some improvement in vegetation conditions would occur as the number of horses are reduced, however during periods of extended drought it would be expected that grazing use would be well above 30 percent, with vegetation conditions being moderately impacted. Overgrazing in key areas would continue during these periods with corresponding competition between wildlife, and horses. Prey base cover and forage would be available in MSO and goshawk habitat, but could be affected during drought year. If current drought conditions continue and grazing is over the 30 percent, it will take longer for the habitat to recover from current conditions. Although potential or suitable habitat for the MSO exists in the mixed-conifer and steep canyons that may be used by wild horses, this alternative would primarily affect the prey species instead of removing nesting or roosting habitat.

Management Indicator Species

Eleven wildlife species were identified as MIS to monitor the conditions of the forest's ecosystems. [13] The Forest Plan provides direction on managing quality habitat for management indicator species by management area (MA). All eleven management indicator species or species groups were considered for the Jicarilla Wild Horse Territory analysis. Seven species and one group were found to have the potential of being affected by the alternatives and were evaluated in detail. Based upon the analysis area not being within the current or potential range for Rocky Mountain bighorn (MA 9 - high elevation grassland), white-tailed ptarmigan (MA 9 - high eleva-

tion grassland), resident trout (MA 14 - riparian, no perennial streams), or aquatic macroinvertebrates (MA 14- riparian, no perennial streams), these species were not evaluated in this analysis.

This environmental assessment is based on the Forest Plan. The MIS that may be affected by the proposed activities, their key habitat components for measuring quality habitat and representative habitats by management area are displayed in Table 16:

Table 16. Management Indicator Species Habitat Within the Jicarilla Wild Horse Territory

Management Indicator Species	Key MIS Habitat Component for Quality Habitat	Forest Plan Management Areas Within the Analysis Area Managed for Quality Habitat
Brewer's Sparrow (*Spizella breweri*)	sagebrush	MA 12 - Sagebrush
Plain (Juniper) Titmouse (*Baeolophus ridgwayi*)	piñon-juniper canopies	MA 8 – Piñon-juniper
Abert's Squirrel (*Sciurus aberti*)	interlocking canopies	MA 4 - Ponderosa Pine <40% MA 5 - Mixed Conifer and Ponderosa Pine >40% MA 7 - Unsuitable Timber
Hairy Woodpecker (*Picoides villosus*)	snags	MA 1 – Spruce-fir <40% MA 3 – Mixed Conifer <40% MA 4 - Ponderosa Pine <40% MA 5 - Mixed Conifer and Ponderosa Pine >40% MA 6 – Aspen MA 7 - Unsuitable Timber MA 14 - Riparian
Red Squirrel (*Tamiasciurus hudsonicus*)	mixed conifer	MA 3 – Mixed Conifer <40% MA 5 - Mixed Conifer and Ponderosa Pine >40% MA 6 – Aspen MA 7 - Unsuitable Timber
Rocky Mountain Elk (*Cervis elaphus canadensis*)	general forest	MA 1 – Spruce-fir <40% MA 3 – Mixed Conifer <40% MA 4 - Ponderosa Pine <40% MA 5 - Mixed Conifer and Ponderosa Pine >40% MA 6 – Aspen MA 7 - Unsuitable Timber MA 8 – Piñon-Juniper MA 9 – High Elevation Grassland MA 12 – Sagebrush MA 14 - Riparian
Merriam's Turkey (*Meleagris gallopavo*)	old growth pine	MA 3 – Mixed Conifer <40% MA 4 - Ponderosa Pine <40% MA 5 - Mixed Conifer and Ponderosa Pine >40% MA 7 - Unsuitable Timber

Site-specific environmental effects on these species' habitats are described by alternative. After the site-specific effects analysis, there is a discussion of how the appropriate management level for wild horses on the JWHT for each alternative might affect these MIS and their habitats across Carson National Forest.

Brewer's Sparrow

In the Carson National Forest, the Brewer's sparrow is an indicator species for sagebrush. [14] Potential Brewer's sparrow habitat is well distributed across the district. The current geographic information systems (GIS) vegetation data identifies 81,752 acres of sagebrush habitat on the Forest. [116a] The Jicarilla Ranger District has approximately 7,703 acres of sagebrush. The Carson MIS Assessment estimates that Brewer's sparrow habitat between 1986 and 2002 has been in an upward trend of about 55 percent and is in good condition.

Alternative A would continue to remove sagebrush or put it in a condition where it no longer supports the Brewer's sparrow in certain areas. While Alternative A could impact quality habitat for Brewer's sparrow by wild horses grazing on the sagebrush in certain areas, it is not a large enough area to cause a downward forest-wide trend. The other alternatives should benefit sagebrush and continue the forest-wide habitat trend.

Forest-wide monitoring of Brewer's sparrow and other birds began in 2003 and is continuing in 2004, however, it is too early to determine any forest population information from this effort. Throughout its range, the Brewer's sparrow is listed as globally secure and common, widespread and abundant. Monitoring information from the North American Breeding Bird Surveys in New Mexico from 1986 to 1999 indicate population and trends are fairly stable for the entire state. Alternative A could affect local groups of Brewer's sparrow; however the area is too small to affect population trends for the forest. Implementation of any alternative should not change the stable trend.

Plain (Juniper) Titmouse

The plain titmouse is an indicator species for piñon-juniper canopies. [14] Potential habitat for plain titmouse is abundant and well distributed across the district. Forest-wide habitat trend for this species is based on acres of available quality or "occupied" habitat identified. The plain titmouse habitat from 1986 to 2002 is estimated to have declined 6,680 acres or about two percent forest-wide.

While none of the alternatives would contribute to the habitat decline in the JWHT, the downward trend of piñon canopies across the forest is likely to continue as piñon trees die from bark beetles and drought.

The titmouse was observed in one of the piñon-juniper transects on the district in 2003. [257] As 2003 was the first year of forest-wide bird monitoring is not yet available on population trend. Throughout its range, the plain titmouse is listed as globally secure and common, widespread, and abundant. Monitoring information from the North American Breeding Bird Surveys in New Mexico from 1968 to 1999 indicate population and trends are slightly down for the entire state. None of the alternatives would affect the population trend. It is expected the population would continue to decline due to beetles and drought.

Abert's Squirrel

Forest-wide habitat trend for this species is based on acres of available quality or "occupied" habitats (interlocking canopies in ponderosa pine) identified in the Carson Forest Plan EIS [14] compared to an estimate of existing acres of similar habitat. Abert's squirrel habitat from 1986 to 2002 is estimated to have increased from 53,220 to 63,190 acres or an upward trend of about 20 percent. None of the alternatives proposed would remove Abert's squirrel habitat, therefore, there are no anticipated effects to the forest-wide habitat trends.

The Abert's Squirrel is known to reside on the district, and was documented to have the highest density (0.02 squirrels/ha) of any other districts on the Carson NF. [255a] However, these values are significantly below densities found at other locations and times. This is believed to be due, at least partially from the long-term drought in the region and the timing of the surveys. Population monitoring was initiated for Abert's squirrel in 2003, so information on forest population trends is not yet available.

Throughout its range, the Abert's squirrel is listed as globally secure and common, widespread, and abundant. In New Mexico, the Abert's squirrel is listed as apparently secure, uncommon, but not rare. The Abert's squirrel population on the forest is considered to be stable, and although lower than potential, are viable populations. None of the alternatives proposed would change the trend forest-wide.

Hairy Woodpecker

Forest-wide habitat trend for the hairy woodpecker is based on acres of available quality or "occupied" habitat (present of snags and down logs). Hairy woodpecker habitat from 1986 to 2002 increased from 106,880 acres to 112,444 acres or an upward trend of five percent. None of the alternatives proposed would remove hairy woodpecker habitat, therefore, there are no anticipated effects to the forest-wide habitat trend.

Since 2003 was the first year of forest-wide bird monitoring, data is not yet available on forest population trends. Throughout its range, the hairy woodpecker is listed as globally secure and common, widespread and abundant, although it may be rare in parts of its range, particularly on the periphery. Monitoring information from the North American Breeding Bird Surveys in New Mexico from 1968 to 2000 indicates population and trends are stable, abundant and not declining. None of the alternatives would affect hairy woodpecker populations. Implementation of any alternative would not change this stable trend.

Red Squirrel

Red squirrel principally utilizes and is an indicator for the presence of mixed conifer. There are small, widely scattered patches of this type of habitat on the district. A small mammal survey conducted in 2003 in the largest block of mixed conifer indicated a complete lack of red squirrel sign. [255b] Therefore, the red squirrel is thought to not inhabit the district.

Rocky Mountain Elk

Forest-wide habitat trends for elk are based on acres of available "occupied" habitat (general forest health). Elk habitat from 1986 to 2002 increased from 1,362,760 acres to 1,424,074 acres of habitat or an upward trend of almost 4 percent. The entire Jicarilla Wild Horse Territory is considered elk habitat.

Alternative A would reduce the amount forage available in the area for the elk and could lead to making the habitat unacceptable for elk especially during drought. Alternative D could affect the elk during years of drought since the forage is designated toward wild horses as the highest priority. Alternatives B and C would make more forage available as the range condition improves. Since the JWHT has only 5 percent of the forest habitat and not all of that would be unsuitable for the elk, none of the alternatives would cause the forest's habitat trend to decline.

It is estimated that there are approximately 175 resident deer and 81 resident elk in the JWHT. Big game populations increase in the winter, with migratory animals estimated at 700 deer and 325 elk. The exact numbers of big game vary depending on weather conditions. Aerial survey data show that deer population numbers have been fluctuating around a constant for the last 15

years, while the elk population seems to have peaked in the early 1990's and is slightly declining. These populations have been acceptable to the Forest Service and the New Mexico Department of Game and Fish for the last several years. Since there is very few tracts of private land within and adjacent to the JWHT, depredation by elk on private land has not been a problem.

NM Department of Game and Fish and the Forest Service jointly conduct annual surveys during January for elk. There is elk survey data available from 1981 to present. The data shows a steady or increasing population from 1981-1993, and a slightly decreasing population since then.

Throughout its range, the elk is listed as globally secure and common, widespread and abundant. Within the United States, elk is listed as secure and common, widespread, and abundant. The population trend for elk on the Carson National Forest is up from 1986. None of the alternatives would affect the forest-wide trend.

Merriam's Turkey

Forest-wide habitat trend for the Merriam's turkey is based on acres of available quality or "occupied" habitat. This is based on roost tree availability as identified in the Carson Plan EIS [14] compared to an estimated of existing acres of similar habitat. Merriam's turkey habitat from 1986 to 2002 is estimated to have increased from 117,300 to 118,572 acres or a slight upward trend of about one percent. No roost trees would be affected by any of the alternatives.

The FS and the NM Department of Game and Fish have cooperated in transplanting over 60 birds since 1988 on the district. The two agencies plus BLM also cooperatively conduct yearly gobbler surveys to track population trends. These surveys do not provide population numbers, but can show upward or downward trends. Results of these surveys had shown a steady or slightly increasing population since 1996. It is estimated that there are 600-800 turkeys on the district.

Monitoring information from the North American Breeding Bird Surveys in New Mexico from 1968 to 1999 indicates population and trends are stable, abundant and not declining. Since 1966 the population trend of the Merriam's turkey in the western part of the United States has increased over 33 percent. The population trend for the Merriam's turkey on the Carson National Forest is also considered to be upward. Alternative A could affect the available of insects and cover for poults. This could have a local affect on the turkey, but would not affect the forest-wide trend. The other alternatives would not affect forest trend.

Migratory Birds and Associated Habitat Types

New Mexico Partners in Flight (PIF) identifies physiographic areas and high priority migratory bird species by broad habitat types. They also developed a list of priority breeding bird species by habitat type. The US Fish and Wildlife Service released its Birds of Conservation Concern 2002 report (http://migratorybirds.fws.gov/reports/bcc2002.pdf). The Jicarilla Wild Horse Territory environmental assessment uses information from both the New Mexico PIF website (http://www.hawksaloft.org/pif.shtml) and the Birds of Conservation Concern Report for the Southern Rockies/Colorado Plateau Bird Conservation Region (BCR #16) for the migratory bird analysis. The New Mexico PIF highest priority list of species of concern by vegetation type and the BCR #16 species list are used to determine which species are analyzed in this analysis.

The following species are not included because they do not have habitat in the area, do not occur in this area, or only migrate through the area.

Table 17. Priority List of Migratory Birds Considered But Not Analyzed

Species	FWS/PIF	Habitat Type
Gunnison sage grouse	FWS	Sagebrush/not in New Mexico (NM)
Marbled godwit	FWS	Grassland/ central NM
Snowy plover	FWS	Barren sandy beaches and flats/ southern NM
Sprague's pipit	FWS	Alpine meadows
Solitary sandpiper	FWS	Sandy beaches and flats/central and eastern NM
Crissal thrasher	FWS/PIF	Montane shrub/southern NM
Swainson's hawk	FWS	Prairies and plains/migration only
Short-eard owl	FWS	Marshes and tundra
Peregrine falcon	FWS/PIF	Cliff near water
Northern Harrier	FWS	Grassland near riparian
Black swift	FWS/PIF	High elevation riparian, cliffs, waterfalls
Lucifer hummingbird	PIF	Canyons in extreme southwest NM
Wilson's phalarope	FWS/PIF	Wet meadows
Chestnut-collared longspur	FWS	Moist upland prairie
Yellow-billed cuckoo	FWS/PIF	Riparian habitat/not enough to support in area
Red-faced warbler	PIF	High mountains southwestern NM
Greater pewee	PIF	Pine-oak woodlands southwestern NM
Olive warbler	PIF	High mountains southwestern NM
Black-chinned sparrow	PIF	Brushy mountain slopes southern NM
Long-billed curlew	PIF	High plains, rangeland eastern NM
Scissor-tailed flycatcher	PIF	Semi-open country eastern NM
Dicksissel	PIF	Alfalfa fields, prairies eastern NM
Cave swallow	PIF	Caves in southern NM

The following sections describe habitats found on the JWHT and the migratory birds that are typically found in these habitats. All species described have not been located within the JWHT, but have the potential of occurring.

Great Basin Desert Shrubland

Highest priority species include loggerhead shrike, sage thrasher, Bendire's thrasher and sage sparrow. In addition, the BCR list includes the burrowing owl.

Table 18. Priority Species for Great Basin Shrubland

Species	FWS /PIF	Important Features and Life History Considerations	Effects
Burrowing owl	FWS	• Preferred habitat is opened to dense stands of shrubs and low trees. • Breed in grasslands, prairies, or opened areas near human habitation. • Beetles, grasshoppers, and crickets form the majority of the owl's arthro-pod diet.	Alternative A could impact the owl by reducing prey species in the area due to the condition of the range. Alternative B, C, and D would benefit prey of the owl as the range condition improves.
Loggerhead shrike	PIF	• Shrub component within grassland habitat critical. • Nest height above ground depends on	Alternative A would negative impact the shrub component of the shrike due to the continue degrading of the sagebrush

Species	FWS /PIF	Important Features and Life History Considerations	Effects
		shrub height. • Shrubs with spines or barbed wire fence useful for impaling prey before eating.	habitat. Alternatives B, C, and D would benefit the shrike as the sagebrush condition should improve over time.
Sage thrasher	PIF	• Sagebrush obligate species prefers sage-dominated grasslands and shrubby arid lands. • Prefers nesting substrates >70cm with minimal bare ground present • Nests are placed in areas of dense scrublands with a concealing vegetation canopy cover.	Alternative A would negative impact the sage thrasher due continual degrading of the sage habitat, due to the fact it requires large dense sagebrush. Alternatives B, C, and D would benefit the sage thrasher as the sagebrush condition should improve over time.
Bendire's thrasher	FWS PIF	Nests are typically placed 0.7 meters to 1.5 meters in height above the ground in semi-desert shrubs, cacti, or trees	Alternative A would benefit the Bendire's thrasher since it is especially prevalent in degraded grasslands in northwestern New Mexico. Alternatives B, C, and D would have a negative affect on the Bendire's thrasher as the grassland condition improve over time.
Sage sparrow	FWS PIF	Prefers semi-opens habitat with tall (1-2 meters), evenly spaced, large canopy shrubs of pure big sagebrush or interspersed with butterbrush, saltbush, shadscale, rabbitbrush or greasewood, occasionally in sagebrush-juniper habitat.	Alternative A could have an negative since two of the habitat objectives is to have a high percentage (>75%) of live sage within stands of sagebrush and to maintain evenly spaced sagebrush from 10-20 m (3-6 ft). Alternatives B, C, and D would benefit the sparrow as the sagebrush condition should improve over time.

Montane Shrub

High priority species include MacGillivray's warbler and green-tailed towhee.

Table 19. Priority Species for Montane Shrub

Species	FWS /PIF	Important Features and Life History Considerations	Effects
Green-tailed towhee	PIF	• At lower elevation, prefers more mesic areas with diverse shrub species (sagebrush, piñon-juniper, and/or greasewood). • Nests in areas of high shrub density, nest are approximately 70 cm in height above the ground.	Alternative A could impact the towhee by reducing the quality of the shrubland. Alternative B, C, and D would benefit prey of the towhee as the range condition improves.
MacGillivray's Warbler	PIF	• Preferred shrubby habitats in spruce-fir and fir forests including riparian shrubland with a herbaceous understory, commonly forbs, but sometimes grasses, and sedges. • Uses riparian habitat for breeding. • Generally feeds on invertebrates.	Alternative A would negative impact the riparian component of the warbler due to the continue degrading of the riparian habitat. Alternatives B, C, and D would benefit the shrike as the riparian condition should improve over time.

Piñon-Juniper Woodland

High priority species include ferruginous hawk, gray flycatcher, gray vireo, Bendire's thrasher and black-throated gray warbler. BCR species also include Virginia's warbler, and piñon jay. Species recorded on the District in the 2003 Breeding Bird Survey include the gray flycatcher, black-throated gray warbler, Virginia's Warbler, and piñon jay.

Table 20. Priority Species for Piñon-Juniper Woodland

Species	FWS /PIF	Important Features and Life History Considerations	Effects
Ferruginous hawk	FWS PIF	• Require close proximity to high quality grassland or irrigated agriculture land. • Prefers forest edge or mature isolated, flat-topped junipers, with thick branches for nesting. • In northwest New Mexico; often nests on rock spires. • Highly sensitive to human disturbance. • Prey mainly consists of small to medium-sized mammals.	Alternative A would impact the hawk by affecting the quality of the grassland the condition of the range. Alternative B, C, and D would benefit prey of the hawk as the range condition improves.
Gray Flycatcher	PIF	• Prefers open piñon-juniper forest, often with interspersed ponderosa. • Shrub cover cannot be too dense; prefers approximately 60%. • Logging and fire may create new habitat after several years.	Alternative A would negative impact the shrub component of the shrike due to the continue degrading of the sagebrush habitat. Alternatives B, C, and D would benefit the shrike as the sagebrush condition should improve over time.
Gray vireo	PIF	• Prefers open piñon-juniper woodland or juniper savanna with a shrub component (35-45% cover). • In northwest New Mexico; found in broad-bottomed, flat or gently sloped canyons in areas with rock outcroppings on near ridge tops. • Antelope bitterbrush, mountain mahogany, Utah serviceberry and big sagebrush are shrubs found in northwest areas, with large amounts of bare ground between herbaceous plants forming ground cover. • Feeds on ground and up to 16 feet. • No water required.	Alternative A could potentially affect the goal to maintain 50-65% shrub cover over large areas in mature piñon-juniper forest. Alternatives B, C, and D would benefit the sage thrasher as the shrub condition should improve over time.
Bendire's thrasher	FWS PIF	See Great Basin Desert Shrub table	
Black-throated gray warbler	FWS PIF	• Prefers large stands of piñon-dominated woodland. • Often found in dense forests with a canopy. • Understory can be variable. • Uses edges: tree/shrub or tree/grass. • Current breeding bird survey trends for	None of the alternative would affect this species

Species	FWS /PIF	Important Features and Life History Considerations	Effects
		the western U.S. region show this species increasing slightly.	
Piñon jay	FWS	• Inhabits piñon-juniper woodlands, ponderosa pine, and lodgepole pine forests at middle elevations (5000-7500 feet). • Population may be regulated by the size of the pine seed crops. • Nests in pinions 3-18 feet high and ponderosa pines 5-78 feet high.	None of the alternative would affect this species.

Ponderosa Pine Forest

High priority species include northern goshawk, flammulated owl, Virginia's warbler and grace's warbler. BCR list includes Williamson's sapsucker. Grace's Warbler was recorded during breeding bird surveys in 2003.

Table 21. Priority Species for Ponderosa Pine

Species	FWS /PIF	Important Features and Life History Considerations	Effects
Northern goshawk	PIF	See Forest Service Sensitive Species	
Flammulated owl	FWS PIF	• Secondary cavity nester. • Most closely associated with open ponderosa pine forest, but may use Douglas, white fir, blue spruce, aspen or larger scrub oaks, piñon-juniper canyons and clearings. • Nest holes are made mostly by flickers or sapsuckers. • Almsost exclusively insectivorous. • U.S. populations are highly migratory.	Alternative A could impact the owl by reducing prey species in the area due to the condition of the range. Alternative B, C, and D would benefit prey of the owl as the range condition improves.
Virginia's warbler	FWS PIF	• Mostly ponderosa pine forest; always open with well-developed herbaceous or dense woody understory as a special requirement. • Nesting areas nests built on ground, in a depression or at base of a shrub, concealed by dead leaves or overhanging foliage or grasses, but especially Gambel's oak. • Percentage of dead trees is negatively correlated with nesting area.	Alternative A could potentially negative affect due to the fact the loss of grasses, there is no buildup of fine fuels to maintain fire, which is an integral part of this ecosystem. Alternatives B, C, and D would benefit the Virginia's warbler as the grass cover should improve over time. Due the present of gas well, the use of fire in the system will be limited.

Species	FWS /PIF	Important Features and Life History Considerations	Effects
Grace's Warbler	FWS PIF	• Ponderosa pine forest: sometimes with a scrub oak component, considered a mature pine obligate; preference given to robust, mature or old growth forest. • Feeds in the upper portions of robust pines on branches, nests found in trees from 20-60 feet (6-8 m) above the ground. • Removal of trees 40-70 ft (12-21 m) tall may have a detrimental effect on populations.	None of the alternatives would affect this species.
Williamson's sapsucker	FWS	• Specializes in sap and phloem; breeders switch to a diet of ants during the nestling season, especially carpenter and wood ants. • Wounded or scarred live conifers most frequently used for feeding. • Availability of suitable nesting sites critical component, preferring snags. • Prefers conifers infected with the fungus *Fomes igniarius*. • Prefers drainage bottoms to ridge top.	None of the alternative would affect this species

Mixed Conifer Forest

High priority species include Mexican spotted owl, Williamson's sapsucker, and olive-sided flycatcher. The BCR includes the flammulated owl. The olive-sided flycatcher was observed during breeding bird surveys in 2003.

Table 22. Priority Species for Mixed Conifer Forest

Species	FWS /PIF	Important Features and Life History Considerations	Effects
Northern goshawk	PIF	See Forest Service Sensitive Species	
Mexican spotted owl	PIF	See Threatened and Endangered Species	
Flammulated owl	FWS	See Ponderosa Pine table.	
Olive-sided flycatcher	PIF	• Nest in coniferous trees generally far out from the trunk • Needs forest edges for foraging and increases in density with a decrease in canopy cover. • Needs snags or tree tops near open areas or above canopy as diet consists mainly of larger flying insects, primarily bees.	Alternative A could potentially negative affect due to the fact the loss of grasses, there is no buildup of fine fuels to maintain fire, which is an integral part of this ecosystem. Alternatives B, C, and D would benefit the Virginia's warbler as the grass cover should improve over time. Due the present of gas well, the use of fire in the system will be limited.

Species	FWS /PIF	Important Features and Life History Considerations	Effects
Ducky fly-catcher	PIF	Uses mixed conifer or ponderosa pine forest with a shrubby understory; brushy areas and open areas with scattered trees, such as early disturbance, such as fire. Shrub component appears to be critical in New Mexico. Tends to choose shrubs with denser foliage for nesting. Nests built from 3-16 feet. Openings near shrubs needed for foraging.	None of the alternatives will affect this species.
Williamson's sapsucker	FWS PIF	See Ponderosa Pine table.	

Plains and Mesa Grassland

High priority species include the ferruginous hawk, prairie falcon, mountain plover, Bendire's sparrow, and lark bunting.

Table 23. Priority Species for Plains and Mesa Grassland

Species	FWS /PIF	Important Features and Life History Considerations	Effects
Ferruginous hawk	FWS PIF	See Piñon-Juniper table	
Prairie falcon	PIF	• Prefers open grasslands and shrub-grassland. • Ledges and cavities in cliffs or bluffs are common nest sites. • Nesting sites are highly limiting. • Ground squirrels are an important breeding food source. • Horned larks and meadowlarks are important non-breeding food sources.	Alternative A would impact the falcon by affecting the quality of the grassland the condition of the range. Alternative B, C, and D would benefit prey of the falcon as the range condition improves.
Mountain plover	PIF	• Prefer short-grass prairie and shrub steppe landscapes where nests typically occur on level terrain with sparse, short vegetation. • Positive habitat indicators include level terrain, prairie dogs, bare ground, cattle, widely spaced plants, and horned larks. • Negative habitat indicators grass taller than 4 inches, wet soils and killdeer.	Alternative A would benefit the mountain plover since it is needs bare to short grass. Alternatives B, C, and D would have a negative affect on the mountain plover as the grassland condition improve over time.
Bendire's thrasher	FWS PIF	See Great Basin Desert Shrub table	

Species	FWS /PIF	Important Features and Life History Considerations	Effects
Lark bunting	FWS PIF	Primarily found in short-grass grasslands, occasionally in sagebrush shrublands and weedy agricultural areas. Prefers dense grass approximately 13 cm in height. Less than 15% bare ground is optimal and >60% bare ground is not useable. Territory size is approximately 1-2 acres with a larger patch size due to species socialization. Nesting occurs on the ground in areas with 10-30% cover of shrubs and mid-grasses to protect from solar radiation. Grasshoppers are the stable diet.	Alternative A would have a negative affect on the lark bunting due to the following reasons: low grass height; potential increase in bare ground; removal of the grasshopper habitat; and reduction in shrubs. Alternatives B, C and D should improve habitat over time as the range condition improves.

Cave/Rock/Cliff

High priority species includes the prairie falcon.

Table 24. Priority Species for Cave/Rock/Cliff

Species	FWS /PIF	Important Features and Life History Considerations	Effects
Prairie falcon	PIF	See Plains and Mesa Grassland table	None of the alternative will affect this habitat type. See Plains and Mesa grassland table for other effects.

Cumulative Effects

The JWHT has historically been a grazing allotment. In addition, the area has have gas product since the 1940's. Currently cattle have not grazed in the JWHT since 2000, except for one allotment that had 12 cattle grazing on it in 2001.

It is expected that gas well development will double the number of wells on the district over the next 20 years. Analysis of the three allotments within the JWHT is scheduled to be completed by the end of 2004. Until range conditions improve on the allotments, it is unlikely that livestock will be authorized to graze them. When grazing is continued, utilization standards described in this document will be met.

The effects of increased gas well development are currently being described in an EIS for the Jicarilla Ranger District. Mexican spotted owl nest sites and known goshawk territories will continue to be protected under any of the alternatives. Once the designation is final, critical habitat for the MSO will be protected from removal. It is unlikely the bald eagle of will be affected by these activities with current standards that are being applied for both grazing and gas development. No additional cumulative effects for these species should occur when combined with the effects of the action alternatives.

If Ripley's milkvetch is found on the JWHT, it will continue to be affected by future grazing from wild horses, cattle, and wildlife. In addition, there is potential for gas wells to remove sites if the plant is not located before a pad or road is installed.

Effects to migratory birds depend on the species and their habitat requirements. Species that depend on grassland and shrubs could be affected by grazing activities and gas well developments.

Both of these activities can remove habitat. It is expected that the effects from grazing would be reduced in the future. While gas well development can remove habitat with the development of roads, pipelines, and pads, some of this would replaced by reclamation activities when successful. It is unknown how much the effects from these activities would balance each other out. For birds in conifer habitats, the grazing would likely have little impact on them. The gas development can cause fragmentation and removal of their habitat.